

Amendments to the Claims

Please amend claim 5 as provided below.

Please cancel claims 1-3 without prejudice or disclaimer.

This listing of claims will replace all prior versions, and listings, of claims in the application.

Listing of Claims:

Claims 1-4. (Canceled).

5. (Currently amended) A method for inhibiting TGase activity of zymogen Factor XIIIa (FXIIIa) and/or tissue transglutaminase (tTGase) in a chondrocyte, comprising:

a) contacting the chondrocyte with an effective amount of an inhibitor of a TNF α receptor-associated signaling factor (TRAF), wherein the inhibitor is NG-monomethyl-L-arginine acetate (NMMA), ~~thereby inhibiting TGase activity of zymogen Factor XIIIa (FXIIIa) and/or tissue transglutaminase (tTGase) in the chondrocyte; and~~

b) detecting a decrease in TGase activity of zymogen Factor XIIIa (FXIIIa) and/or tissue transglutaminase (tTGase) in the chondrocyte, thereby inhibiting TGase activity of zymogen Factor XIIIa (FXIIIa) and/or tissue transglutaminase (tTGase) in the chondrocyte.

6. (Previously Presented) The method of claim 5, wherein the inhibitor is an inhibitor of IL-1, Noc-12, Sin-1, tumor necrosis factor α (TNF α), and/or TNF α receptor-associated signaling factor (TRAFs), TRAF2 and TRAF6.

7. (Withdrawn) The method of claim 5, wherein the inhibitor is a polynucleotide that inhibits tTGase or FXIIIa expression.

8. (Previously Presented) The method of claim 5, wherein the method is performed *in vitro*.

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9. (Previously Presented) The method of claim 5, wherein the method is performed *in vivo*.

10. (Previously Presented) The method of claim 9, wherein the chondrocyte is from a chondrocyte-derived cell line.

Claims 11-13. (Canceled).

14. (Withdrawn) The method of claim 11, wherein the conditions for inducing matrix calcification include contacting the chondrocyte with an agent that activates and/or increases activity of zymogen factor FXIIIa and/or tissue transglutaminase (tTGase), wherein the agent affects the activity of IL-1, Noc-12, Sin-1, and/or tumor necrosis factor α (TNF α).

15. (Canceled).